

5601

Department of Energy
Finding of No Significant Impact
Consolidation of Certain Materials and Machines for Nuclear Criticality
Experiments and Training

Los Alamos National Laboratory

U. S. Department of Energy
Los Alamos Area Office
528 35th Street
Los Alamos, NM 87544

DEPARTMENT OF ENERGY
FINDING OF NO SIGNIFICANT IMPACT

CONSOLIDATION OF CERTAIN MATERIALS AND MACHINES FOR NUCLEAR
CRITICALITY EXPERIMENTS AND TRAINING

LOS ALAMOS NATIONAL LABORATORY

PROPOSED ACTION: In support of its assigned missions and because of the importance of avoiding nuclear criticality accidents, the Department of Energy (DOE) has adopted a policy to reduce identifiable nuclear criticality safety risks and to protect the public, workers, government property and essential operations from the effects of a criticality accident. In support of this policy, the Los Alamos Critical Experiments Facility (LACEF) at the Los Alamos National Laboratory (LANL) Technical Area (TA) 18 provides a program of general purpose criticality experiments. This program, the only remaining one of its kind in the United States, seeks to maintain a sound basis of information for criticality control by covering the physical situations that the DOE will encounter in handling and storing fissionable material in the future, and ensuring the presence of a community of individuals competent in practicing this control.

In 1993, the Defense Nuclear Facilities Safety (Board), an oversight organization established under the Atomic Energy Act of 1954, approved and transmitted a recommendation to DOE that DOE continue its criticality experimental capability. In addition to citing the importance of avoiding criticality accidents, the Board stated its concern that the last remaining facility capable of general purpose criticality experimentation and criticality training may be terminated because of lack of funding. The United States Nuclear Regulatory Commission also endorsed the Board's recommendation

in a letter to the Secretary of Energy. In its formal response, the DOE accepted the Board's recommendation and agreed to continue an experimentation program for general purpose criticality experiments and an education program for criticality safety professionals.

In the course of closing or changing the missions of various DOE facilities, certain nuclear materials and machines (mechanical systems designed to move special nuclear materials) used for criticality experiments are being designated as surplus to the requirements at these facilities. Four facilities, the Hanford Plant (Hanford) located in Richland, Washington; Sandia National Laboratory in Albuquerque, New Mexico (SNL/NM); Oak Ridge National Laboratory (ORNL) in Oak Ridge, Tennessee; and the Idaho National Engineering Laboratory (INEL) located in Idaho Falls, Idaho, have recently identified certain nuclear materials and machines used for criticality experiments that they consider surplus to their needs. In addition, LANL currently has highly enriched uranium hemishells (i.e., nesting shells) at LACEF that could also be used to conduct criticality experiments. The DOE now has the opportunity to consolidate these nuclear materials and machines within LACEF at LANL for continued use in its existing program of nuclear materials criticality training and experimentation, and manage these materials and machines in a manner that will maximize their utility. The Environmental Assessment (EA) for the Consolidation of Certain Materials and Machines for Nuclear Criticality Experiments and Training at TA-18, LANL, Los Alamos, New Mexico (DOE-EA-1104), May 1996, analyzes the DOE proposal to consolidate these nuclear materials and machines at LACEF for the purposes of criticality experimentation and training.

The EA compares the effects of the proposed action with the effects of the no action alternative, which is not to consolidate these materials and machines at LANL and not to receive, store, and use these materials at LACEF. If the materials are not transported to LANL, it is anticipated that they would remain at their current locations until another site was found that could use the materials for other purposes or until the materials were declared a waste. The nested shells that are currently at LACEF would continue to be used for training for their historical purpose. Because of anticipated and on-going changes to DOE missions and facilities, it is unlikely that these other DOE sites would again perform criticality-related work with these materials. No other site, except LANL, is expected to continue to perform the criticality experiments and training mission. Under the no action alternative, criticality experiments and training would continue to occur at LACEF using historically employed materials and machines. However, some criticality experimentation and training that would be unique to these identified materials and machines would not be done. This would affect the DOE's ability to study a wider variety of criticality scenarios and to provide the attendant training to current and new DOE employees, other federal employees, and members of national and international nuclear regulatory agencies. It would also affect the DOE's ability to perform certain types of calibration testing for criticality monitors and alarm systems. Although the no action alternative does not meet the DOE's purpose and need for action, it was analyzed in the EA to provide a baseline comparison with the proposed action.

DOE considered, but dismissed from further analysis, alternatives including (1) conducting general purpose criticality experiments and criticality training at an alternative DOE or LANL site, and (2) receiving and storing these materials at LANL, or an alternative DOE Site, but

not using them to conduct general purpose criticality experiments or training. Since there are no existing alternative DOE or LANL sites that could perform general purpose criticality experiments and support a criticality training program, the first alternative does not meet the purpose and need for agency action, and was eliminated from further analysis in the EA. The second alternative, however, is feasible, and materials could be stored at various alternative locations. However, this alternative does not support the DOE's commitment to continue its on-going experimentation program for criticality safety professionals. In addition, this latter alternative would not result in a consolidation of these surplus materials and machines. It, therefore, does not meet the purpose and need for agency action and was eliminated from further analysis in the EA.

ENVIRONMENTAL EFFECTS: In as much as no new construction, operations, waste streams or emissions are anticipated under the proposed action, it is unlikely that the proposed action would have any adverse effects on environmental concerns. It is estimated that the proposed action would potentially have only a negligible effect on human health and on transportation issues. Neither the proposed action nor the no action alternative would pose a disproportionate adverse health or environmental effect on minority or low-income populations within an 80 km (50 mi) radius of the proposed site. Under the no action alternative, there is a potential for a minor amount of low-level radiological waste to be generated at Hanford, SNL/NM, ORNL and INEL. Because the proposed action is not expected to increase or decrease the environmental and health effects currently experienced at LACEF, no cumulative effects are anticipated.

The analysis of accident scenarios indicates that the probability of an accident occurring and adversely affecting an exposed population is considered extremely unlikely.

No new environmental permits would be required to consolidate these surplus nuclear materials and machines at LACEF for the purposes of criticality experimentation and training.

PREDECISIONAL DRAFT REVIEW & COMMENT: On April 12, 1996, DOE invited review and comment on the preapproval EA from the State of New Mexico and four American Indian Pueblos: Cochiti, Jemez, Santa Clara and San Ildefonso (i.e., four accord pueblos). On May 1 1996, DOE invited review and comment on the preapproval EA from the State of Washington and four American Indian tribes (Wanapum, Yakima, Nez Perce, Umatilla), located near the Hanford DOE Site, which potentially might be affected by shipments of low enriched uranium fuel rods from Hanford to LANL. In addition, DOE made the pre-decisional draft EA available to Los Alamos County and the general public at the same time it was provided to the State of New Mexico and four accord pueblos by placing it in the Los Alamos National Laboratory Community Reading Room and the DOE Public Reading Room in Albuquerque. Also, local stakeholder groups were notified of the availability of the pre-decisional draft on April 16, 1996.

Comments were received from one party; the New Mexico Environment Department. This set of comments was addressed in the Final EA, and an individual response to the comments was prepared by LAAO and sent to the respondent.

FOR FURTHER INFORMATION CONTACT: For further information on this proposal, this Finding Of No Significant Impact (FONSI), or the DOE's National Environmental Policy Act (NEPA) review program concerning proposals at LANL, please contact:

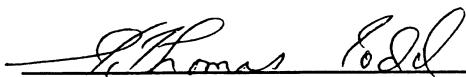
Elizabeth Withers, NEPA Compliance Officer
Los Alamos Area Office
U.S. Department of Energy
528 35th Street
Los Alamos NM 87544
(505) 667-8690

Copies of the environmental assessment and this FONSI will be made available for public review at the Los Alamos National Laboratory Community Reading Room, 1450 Central Avenue, Suite 101, Los Alamos, New Mexico, 87544 at (505) 665-2127 or (800) 543-2342. Copies will also be made available in the DOE Public Reading Room, located in the Atomic Museum, 20358, Wyoming Boulevard, Albuquerque, New Mexico, 87185 at (505) 845-6670.

FINDING: The United States Department of Energy finds that there would be no significant impact from proceeding with its proposal to consolidate certain nuclear materials and machines used for criticality experiments at LACEF, TA-18, LANL. DOE makes this Finding of No Significant Impact pursuant to the National Environmental Policy Act of 1969 [42 U.S.C. 4321 et seq.], the Council on Environmental Quality (CEQ.) regulations [40 CFR 1500] and the DOE NEPA regulations [10 CFR 1021]. Based on the environmental assessment that analyses the potential environmental effects that would be expected to occur if the DOE were to consolidate these surplus materials and machines at LACEF, the

proposed action does not constitute a major federal action which would significantly affect the human environment within the meaning of NEPA. Therefore, no environmental impact statement is required for this proposal.

Signed in Los Alamos, New Mexico this 22nd day of May, 1996.



G. Thomas Todd
Area Manager
Los Alamos Area Office